

What is claimed:

1. A process for manufacturing metal foam, the process comprising:
introducing gas into a foamable molten metal from at least two neighboring
similarly dimensioned feed pipes projecting into a metallurgical vessel; and
forming bubbles in an area of ends of the projecting pipe,
whereby abutting areas of adjacent bubbles form particle-containing
interstructures.
2. The process of claim 1, wherein the metal foam is a free-flowing metal
foam having a monomodal distribution of cavity dimensions.
3. The process of claim 1, further comprising:
determining a size of individual bubbles based upon a distance between
adjacent feed pipes.
4. The process of claim 3, wherein the bubbles comprise cavities and
wherein the process further comprises:
determining a size of individual cavities based upon a distance between
adjacent feed pipes.
5. The process of claim 1, wherein the introducing comprises introducing
gas into one of a mold and an ingot mold.
6. The process of claim 5, further comprising:
allowing the metal foam to solidify.
7. The process of claim 6, further comprising:
forming a dischargeable member having the solidified metal foam.

8. The process of claim 1, wherein the introducing comprises introducing the gas into a mold after an essentially thin-walled solidification stage occurs.

9. The process of claim 8, wherein the mold comprises an ingot mold.

10. The process of claim 8, wherein the essentially thin-walled solidification stage comprises allowing molten metal to solidify on an internal wall of the mold.

11. A device for manufacturing a metal foam, the device comprising:
at least two feed pipes for introducing gas; and
the at least two feed pipes being arranged next to one another,
wherein each of the at least two feed pipes project into a foamable melt.

12. The device of claim 11, wherein the at least two feed pipes are arranged at a distance from one another.

13. The device of claim 12, wherein a size of individual bubbles is based upon the distance.

14. The device of claim 11, wherein the metal foam is a free-flowing metal foam having a monomodal distribution of cavity dimensions.

15. The device of claim 11, further comprising at least one additional feed pipe, wherein each of the feed pipes projects into a molten mass.

16. The device of claim 15, wherein the at least one additional feed pipe is arranged offset relative to one of the at least two feed pipes.

17. The device of claim 16, wherein the at least one additional feed pipe is spaced at an equal distance from each of the at least two feed pipes.

18. The device of claim 11, wherein the at least two feed pipes comprise ends which are substantially similarly shaped.

19. The device of claim 18, wherein the ends are arranged on at least one of a common plane and a common surface.

20. The device of claim 11, wherein the at least two feed pipes are substantially similarly shaped and sized.

21. The device of claim 18, wherein the ends are arranged on at least one of a common plane and a common surface.

22. A metal foam comprising:

a plurality of cavities formed by introduction of a gas into an area wherein several equally spaced ends of equally dimensioned feed pipes project into a foamable melt;

the cavities being arranged in a monomodal distribution; and
adjacent cavities abutting one another.

23. The metal foam of claim 22, wherein adjacent cavities that abut one another grow together by introducing the gas.

24. The metal foam of claim 22, wherein the cavities comprise a substantially predetermined size.

25. The metal foam of claim 22, wherein the cavities comprise a substantially predetermined shape.

26. The metal foam of claim 22, wherein the metal foam is included in a component having a relatively low weight.

27. The metal foam of claim 22, wherein the metal foam is included in a component having a relatively high energy absorption during deformation.

28. A lightweight metal part comprising the foam metal of claim 22.

29. The lightweight metal part of claim 28, wherein the lightweight metal part comprises an automobile part.

30. The lightweight metal part of claim 28, wherein the lightweight metal part comprises an aerospace part.